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I, LEANNE MYNOTT, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. PP 8822 for a patent by CARDS ETC filed on 22 February 1999.



WITNESS my hand this  
Ninth day of March 2000

LEANNE MYNOTT  
TEAM LEADER EXAMINATION  
SUPPORT AND SALES

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**PATENT REQUEST : PROVISIONAL PATENT**

We, being the person identified below as the Applicant, request the grant of a patent for an invention described in the accompanying provisional specification.

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**Invention Title:** CARD MANAGEMENT SYSTEM

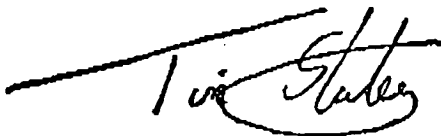
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DATED: 22 February 1999

CARDS ETC

A handwritten signature in black ink, appearing to read 'Tim Staley', is written over a horizontal line.

Patent Attorney for and  
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AUSTRALIA  
Patents Act 1990

PROVISIONAL SPECIFICATION

**Applicant:**

CARDS ETC

**Invention Title:**

CARD MANAGEMENT SYSTEM

The invention is described in the following statement:

CARD MANAGEMENT SYSTEM

The present invention relates to a system and method for the management of card-based products, for example payment products, loyalty products and transportation products.

By "card" we mean, broadly, any device or apparatus which can be used to facilitate product transactions. This includes plastics magnetic-striped cards, smart cards, "virtual" cards ("wallets"), memory cards, microprocessor cards. It also includes any device or apparatus which might not be a card but which may provide for the same functionality.

The use of devices such as cards for facilitating product transactions is ubiquitous. Note that by the term "product" we mean the application that the card is arranged to facilitate. There are a large number of such products and a potential for many more. They include payment products, such as credit card systems and account systems. They also include loyalty products (e.g., airline bonus points products), transport ticketing products (e.g., magnetic striped cards used for automated train and bus ticketing systems).

The management of card-related products is complex. Any product usually requires the involvement of a number of different participants. In a credit card product, for example, the participants involved will usually include the following:

1. Card Issuer. This may be an entity such as a bank who issues a card for facilitating the credit product, to a card holder. Note that the card issuer may have the card manufactured by a card producing bureau, to specifications provided by the card issuer.
2. Card Holder. This is usually the person holding the card and who's credit card account it is.

- 5           3.    Device Manager.   The majority of card-related products require "devices" which are used with the card to facilitate a transaction.   Such devices include ATM's, EFT terminals and credit card terminals, credit card inprinters.   The device manager is responsible for the management of these devices e.g., management of messages received from and sent to the devices and the processing of those messages to facilitate the product transaction.   The device manager may in some cases be the same entity as the card issuer.
- 10           4.    Card Acceptor.   The participant accepting the card and presenting transaction data to the device manager via the device.   The card acceptor in the case of a credit card may be a merchant.
- 15

          In addition to the above, particularly in the case of credit cards, a "scheme operator" participant may also be involved.   Transaction data may go via a scheme operator from the device or device manager for approval of the transaction to the card issuer.   Examples of scheme operators include VISA® and MASTERCARD®.

20

          Note that the device manager participant may be the same entity as a "transaction acquirer", being the participant that acquires a transaction from the card acceptor.   Where the transaction acquirer is a different entity from the card issuer, the transaction acquirer will need to settle the transaction with the issuer.   In credit card transactions this can be done a number of ways.   Further, authorisation for the transaction may be sought on line directly from the issuer or, where a scheme is involved via a scheme operator.   There may be a given floor limit (e.g., \$100.00) where, as long as a transaction is of a value below the transaction value, authorisation is not required.

25

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In a credit card system, the card acceptor usually pays a fee to the acquirer and this fee is shared with the issuer.

5 Other types of products than credit card systems may include variations on the above, but they will substantially be the same. For loyalty programs, for example, a bureau may be involved for the calculation of loyalty points.

10 Management of such products and the relationships between the participants involved is complex. Any management system must be able to carry out a number of processes and obtain information data enabling the management of the product. For example, the management system must be able to manage information flow of  
15 information on the transaction, e.g., identity of card holder (which may be an account number or name) a mount of transaction, address of various participants involved e.g., card manager, card issuer, security information (messages are usually cryptographically protected). The system will  
20 also be required to store process information on the card holder (e.g., address, identity, credit limit).

The implementation of any product may necessarily involve negotiations between various entities involved to decide on the product operating parameters and data that  
25 will be required. A system will then be designed to operate the product, including devices and processing systems for processing the necessary transaction and other data. Alternatively this may involve combining several disparate software packages to operate the product. Such  
30 dedicated systems do not easily lend themselves to alteration or adaptation to facilitate operation of other products.

For example, a scheme and product package may overlap, such that a VISA® or MASTERCARD® credit product by one  
35 financial institution is tied to a product package in a

confined locality (e.g., the Qantas/Telstra/Visa scheme in Australia or the American Express/American Airlines/Hilton scheme internationally.

Present product management application systems  
5 therefore have a number of problems. Firstly, as discussed above, they are not adaptable.

Secondly, if a card is lost and requires replacement, it can be a complex matter to obtain all the necessary information to reissue the card. This is particularly the  
10 case where a card may include more than one product (e.g., a credit card product and a loyalty scheme product on the same card). Information may have to be obtained from a number of different entities in order to reissue the card.

The presently available management systems limit the  
15 extent by which cards carrying different products can be implemented (multi-product cards). The more products that are on a card, the more complex the management system is required to manage the multiple relationship between the different participants in the system. One of the major  
20 benefits of smart cards which is often touted is their ability to be able to facilitate many different products on a single card. A card holder may therefore only need to carry one or two cards which service all the products that they may require. The present management systems stand in  
25 the way of the implementation of multi product cards.

The present "card processing environment" can be considered as a single party environment or a dual party environment. In the case of a single party environment, the card issuer is also the device manager. In the case of  
30 a dual party environment, the card issuer and device manager are separate.

The present applicants have identified the possibility of further party being involved to facilitate the management of card related products. The applicants have  
35 termed this third party a "product owner". The product

owner is an entity who can be considered to "own" a product on the card and may be responsible for the management of the product itself in isolation from the other card management requirements. The addition of a product owner to the single or dual party environment, creates a tripartite environment where there may be three parties involved in the management of a card based product, being the card manager, device manager and product owner (note that all these participants may in some circumstances be the same entity).

The present invention provides a card management system, comprising a product management means arranged to manage product data required to operate product-related aspects of a card-related product, the product data including data required for management of a card acceptor and product owner relationship and data required for management of a card holder and product owner relationship, separately from other aspects of card management, whereby product management may be carried out separately from other aspects of card management, by the product owner.

The product management means preferably includes a database for storing product data.

Any product owner must have a relationship with a card acceptor. The relationship with the card acceptor need not be direct. It is preferably by way of a device manager. What the product owner requires in the relationship with the card acceptor is the right type of product data to enable management of the product. This can be any data which the product owner requires from the card acceptor. It may be a transaction amount, an indication of the number of points in a bonus scheme, or any other information.

To manage the card holder and product holder relationship, product data such as the identity of the card holder will usually be required by the product owner. The identity need not be an actual identity but may merely be



an identification number. In some cases even identity information may not be necessary. Again, the relationship with the card holder may be indirect and any information on the card holder could be provided by other parties in the system e.g., a card issuer.

Separation out of the product management from other aspects of card management gives a number of advantages. Any product can be managed separately from all other aspects of the card-related environment, so that the product owners task is relatively simple (management of the product only) and he need not be concerned with managing, for example, issuance of a card or managing any devices required for the card product. If a new product is required, therefore, the only part of the overall card management system which needs to be amended is the product management means. A chain of restaurants may wish to manage a loyalty scheme, for example, in which case they would be the product owner for the loyalty scheme. Their product management system would only need to be able to manage the information required to manage the loyalty scheme. Other aspects of card management will be done by other entities.

The card management system also preferably includes a card management means for managing card management data.

Preferably, the card management means manages aspects of the card-related environment which are traditionally associated with the card issuer (who will be termed from now on in this document "card manager").

Preferably, the card management system also includes a device management means for managing device management data. Preferably the device management means manages aspects of the card-related environment which are traditionally associated with a device manager.

Preferably, each of the card management means, device management means and product management means can be

provided and used separately so that separate entities can operate as product manager, card manager and device manager.

5 Preferably, the card management system includes a foundation means which is arranged to be used with any one of the card management means, product management means and device management means to process message data and determine which of the card management means, product management means and device management means should receive  
10 the data from the messages.

Any entity which wishes to operate a card management system in accordance with the present invention will preferably operate at least one of the card management means, product management means or device management means,  
15 together with a foundation means. The foundation means enables communication of messages between entities operating a card management system.

With the card management system of the present invention, therefore, an entity that wishes to be involved  
20 in any one aspect of the tripartite card environment conceived by the applicant (product management, card management and device management) will require only the appropriate part of the system which relates to management of the aspect of the card environment that they are  
25 involved with, together with the foundation means, enabling communication of messages of different entities card management systems in the tripartite environment.

An entity that wishes to have a product on a card, therefore, can obtain the product management means and the  
30 foundation means, and operate in the tripartite environment without needing to be able to issue, manage cards or devices. This can be left to other entities who would provide card management service and device management service for the product. The product owner thus manages  
35 the product in isolation from all the other tasks. Aspects

of the product may be updated by updating the product management means to, for example, vary bonus points allocated for a particular transaction for a particular loyalty scheme.

5        In such a system, the reissue of cards that have been lost or destroyed becomes much simpler. A card may include a number of products and the card management system will preferably include data on the number of products and data identifying a path to the product owner. Information will  
10 also be included on the device manager and card manager and information on all aspects of the card could therefore be easily obtained from the entities managing the various components of the system. The provision and management of multi-product cards also becomes simpler with a management  
15 system in accordance with the present invention. If an entity wishes to put a product on a card all he needs to do is obtain the product management system and foundation package and a relationship with a card manager and device manager. The card manager can then put the product on the  
20 card and the device manager amend the management system to take account of transactions which will be associated with the product.

      The security aspects of the system of the present invention are also particularly advantageous. People are  
25 often reluctant to give too many personal details to certain entities. With the present invention, all that the product management system requires is sufficient information to be able to manage the product. A personal identity of a card holder may not be required, for example.  
30 Nor may a credit rating of the card holder. Such aspects can be left to the card manager. If the card manager is a reputable bank, therefore, for example, the product owner may "trust" the bank to carry out the necessary credit rating checks for a card holder, and would not require this  
35 information themselves. This is advantageous for the card

holder as it limits the number of entities that require detailed personal information, but still enables him to obtain access to multiple products.

Customer service is also facilitated by the present invention. The card holder may need only a single contact (usually the card manager) if a product is not operating to satisfaction. A card holder complains to the card manager who may be able to process the complaint themselves or who will be able to pass it on straight away to the product owner (or other relevant party) via the management system.

The present invention further provides a card management system, comprising a plurality of service means, each of the service means being arranged to manage a different aspect of a card-related environment, and wherein each of the service means may be operated separately by different entities in a distributed card-related environment, whereby to facilitate management of a card product.

The present invention yet further provides a method of managing a card related environment, comprising the steps of defining a tripartite environment for card management, the card tripartite environment comprising three participants:

- a card manager participant responsible for managing non-product-specific card functions;

- a device manager participant, responsible for managing devices for accepting cards for carrying out product transactions, and

- a product manager participant, responsible for the management of product-related aspects of a card environment, wherein the device manager participant, card manager participant and product manager participant may be separate entities; providing a computing system including modules enabling each of the card manager participant, device manager participant and product manager participant

roles to be carried out separately from each other.

The present invention yet further provides a method of managing a card related environment, comprising the steps of defining an environment for card management which includes a product manager participant responsible for managing product related aspects of the card environment, and providing a product management computer system which is arranged to manage the product related aspects separately from other aspects of management of a card related environment.

Features and advantages of the present invention will become apparent from the following description of an embodiment thereof, by way of example only, with reference to the accompanying drawings, in which;

Figure 1 is a schematic diagram of a present card-related environment;

Figure 2 is a schematic diagram of a card-related environment facilitated by the card management system of the present invention;

Figure 3 is a block diagram of a system architecture of a card management system in accordance with an embodiment of the present invention, and

Figure 4 is a schematic diagram giving an example of an overall link system including entities running a plurality of card management systems in accordance with embodiments of the present invention, for managing transactions for multiple product cards.

Figure 1 shows a prior art card related environment for management of card products.

The environment includes a card manager 1. The card manager is responsible for issuing a card 2 (perhaps by way of a separate card manufacturing bureau) to a card holder 3. The card manager may be a bank or other financial institution who wishes to issue card holders cards having a credit product, for example. The card manager would

require details of the identity of the card holder, address, credit rating.

The environment also includes a device manager 4 responsible for managing devices 5 required for operation of the card product. The device is a machine which accepts cards and produces product transactions. It includes ATM's, EFT, credit card terminals imprinters and others. The environment also includes a card acceptor 6 who may provide products and services in return for a particular card transaction via device 5. The card acceptor 6 may be a merchant.

Traditionally, dedicated computer systems are used to manage the card product in the current environment.

Referring to figure 2, a modified environment is shown which is facilitated by the card management system in a preferred embodiment of the present invention. In addition to the card manager 1 and device manager 4, there is a further participant, product owner 7. The product owner 7 is responsible for management of aspects of the environment which relate to a particular product on the card 2. The product owner is only responsible for the product. He is not responsible for other aspects of the card environment which are not specifically product related, such as issuing and managing of the card and management of devices. A product owner needs only the information from a device which is required to run the product. The product owner 7 will have relationships with card acceptors who may, for example, provide services in relation to the product and card holders who will be provided with the product on their card.

The card issuer, product owner and device manager may be three separate entities, two entities and one entity or in some cases, all the same entity.

An architecture of a card management system in accordance with an embodiment of the present invention is

illustrated schematically in figure 3. The card management system comprises a foundation module 10, card management module 11, device management module 12 and product management module 13.

5       The foundation module is essentially a message processing module which is arranged to receive message data (e.g., from devices) and forward the message data onto the appropriate management module 11, 12, 13 and receive  
10       messages from the management module 11, 12, 13 and forward them out of the system.

      Each of the management modules includes software which enables management of the aspects of the card product which relate in turn to card management (card management module 11), device management (device management module 12) and  
15       product management (product management module 13).

      The system also comprises one or more business modules 14. These modules encapsulate the functionality required to meet a particular business need of one or more entities participating in a card environment utilising a card  
20       management system in accordance with the present invention. The business modules provide extensions and constraints to the system for the support of specific business requirements. For example, they may provide technical  
25       implementation of interfacing with legacy systems such as Cardpac.

      For a particular operator of a card management system in accordance with the present invention, they may have one, two or all of the three card management modules 11, 12, 13, depending upon their function as an entity in the  
30       card environment. Referring to figure 4, for example, entity one is a firm which wishes to provide and run card-related products. All they require of the system is the foundation module and the product management module, and any business modules which may be needed for particular  
35       business functionality. Entity two is a card and device

manager and entity three is a card manager, device manager and also a product owner.

Each of the management systems of entity one, entity two and entity three may be connected for managing various products. For example, a product owner may use either the  
5 entity one or entity two as the card manager and/or device manager for a particular product.

In operation, a card holder 1 who requires an available product may seek the product from the product  
10 owner. The product may be provided as a software application downloaded via a device 5. The card holder could in fact interact directly with the device to request the product, provide any details that may be required (if they cannot already be provided from the details that the  
15 card manager has on the card holder). The product can then be entered on the card holders card.

It will be appreciated by persons skilled in the art that numerous variations and/or modifications may be made to the invention as shown in the specific embodiments  
20 without departing from the spirit or scope of the invention as broadly described. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive.



THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A card management system, comprising a product management means arranged to manage product data required to operate product-related aspects of a card-related product, the product data including data required for management of a card acceptor and product owner relationship and data required for management of a card holder and product owner relationship, separately from other aspects of card management, whereby product management may be carried out separately from other aspects of card management, by a product owner.

2. A card management system in accordance with claim 1 further comprising card management means for managing card management data.

3. A card management system in accordance with claim 2, wherein the card management data relates to aspects of a card-related environment which are traditionally associated with the card issuer.

4. A card management system in accordance with any one of claims 1 to 3, further comprising a device management means for managing device management data.

5. A card management system in accordance with claim 4, wherein the device management data relates to aspects of the card-related environment which are traditionally associated with the device manager.

6. A card management system in accordance with any preceding claim, further comprising a foundation means for managing message data to and from the card management system.

7. A card management system in accordance with claim 6, further including at least one business module for interfacing with a legacy system.

8. A card management system, comprising a plurality of service means, each of the service means being arranged to manage a different aspect of a card-related environment,

and wherein each of the service means maybe operated separately by different entities in a distributed card-related environment, whereby to facilitate management of a card product.

5

9. A method of managing a card related environment, comprising the steps of defining a tripartite environment for card management the card tripartite environment comprising three participants:

10 a card manager participant responsible for managing non-product specific card functions;

a device manager participant, responsible for managing devices for accepting cards for carrying out product transactions, and

15 a product manager participant, responsible for the management of product-related aspects of a card environment, wherein the device manager participant, card manager participant and product manager participant may be separate entities, providing a computing system including  
20 modules enabling each of the card manager participant, device manager participant and product manager participant roles to be carried out separately from each other.

10. A method of managing card related environment, comprising the steps of defining an environment for card  
25 management which includes a product manager participant responsible for managing product related aspects of the card environment, and providing a product management computer system which is arranged to manage the product related aspects separately from other aspects of management  
30 of a card related environment.

11. A card management system comprising a product management means arranged to manage product data required to operate product-related aspects of a card-related product, whereby the product management means is arranged  
35 to manage product related aspects separately from other

aspects of management of a card related environment.

Dated this 22nd day of February, 1999

5 CARDS ETC

By their Patent Attorney

GRIFFITH HACK

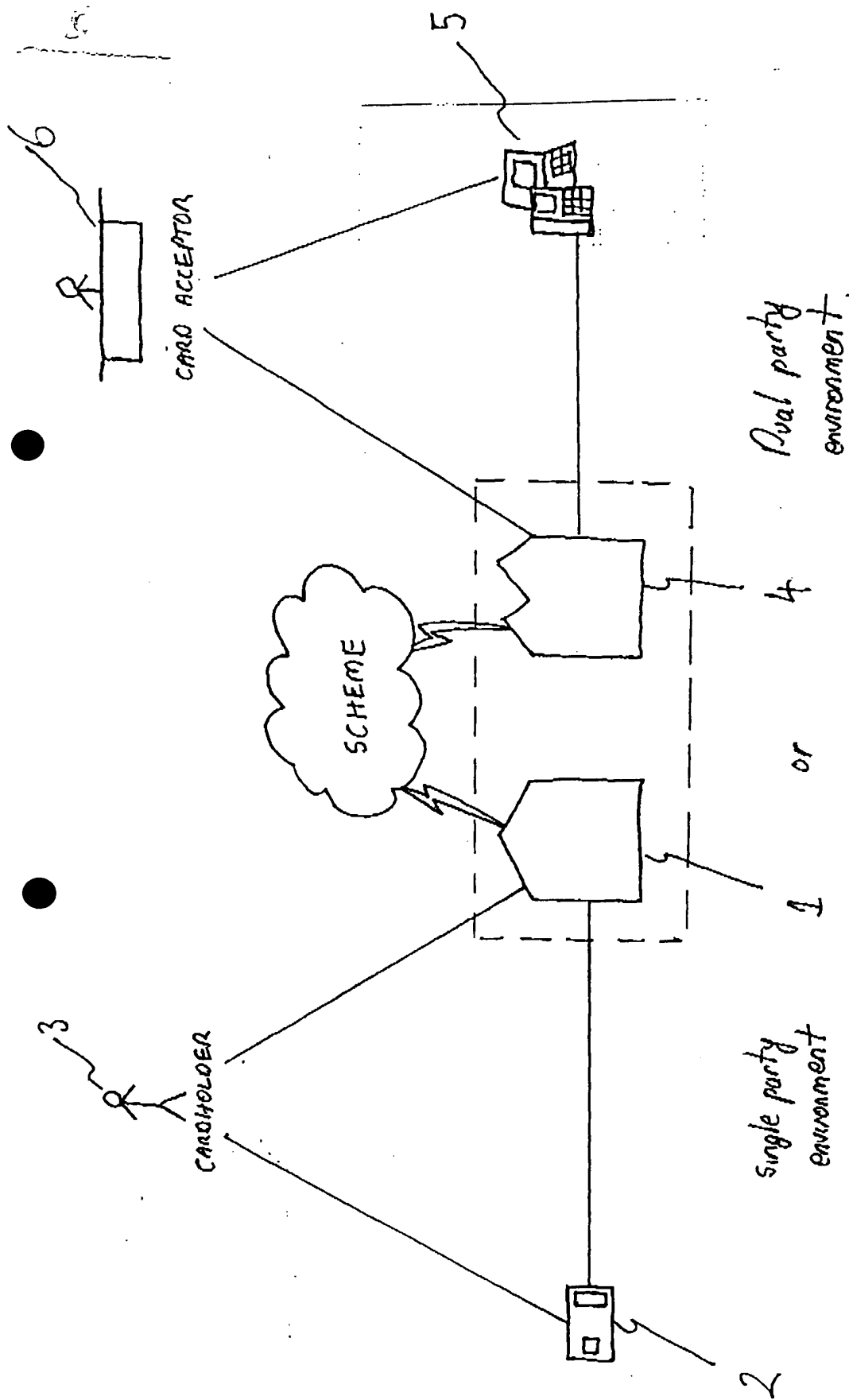


FIGURE 1

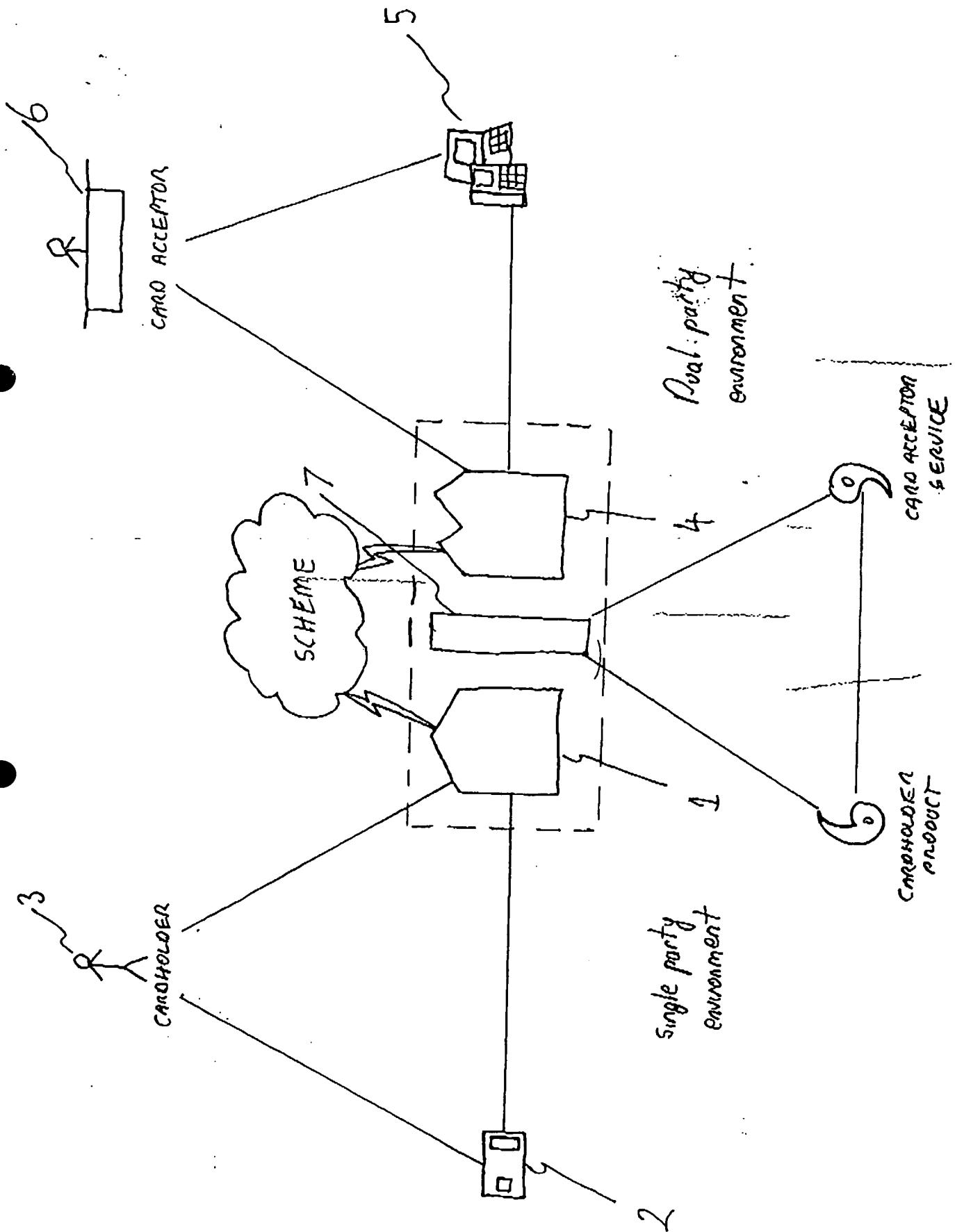


FIGURE 2

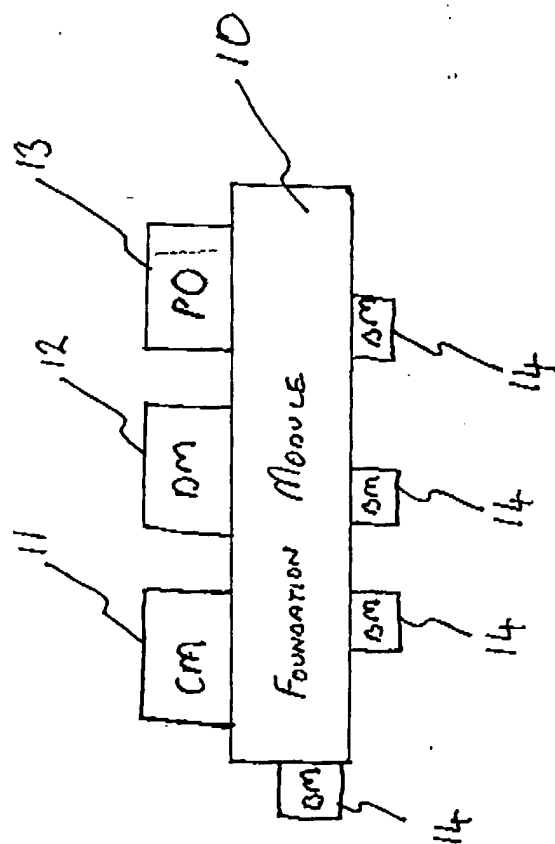
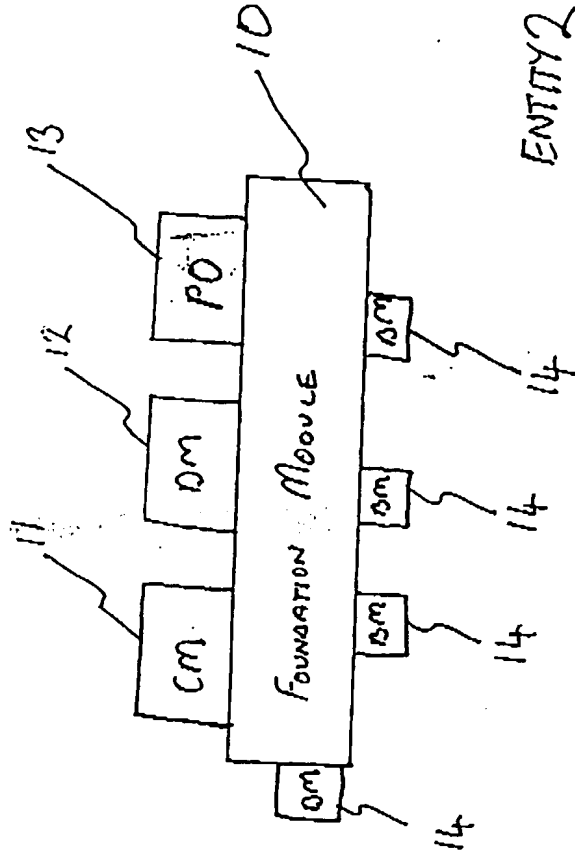
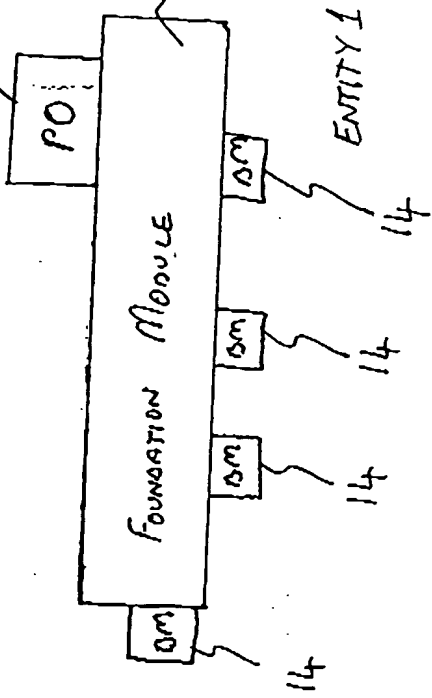
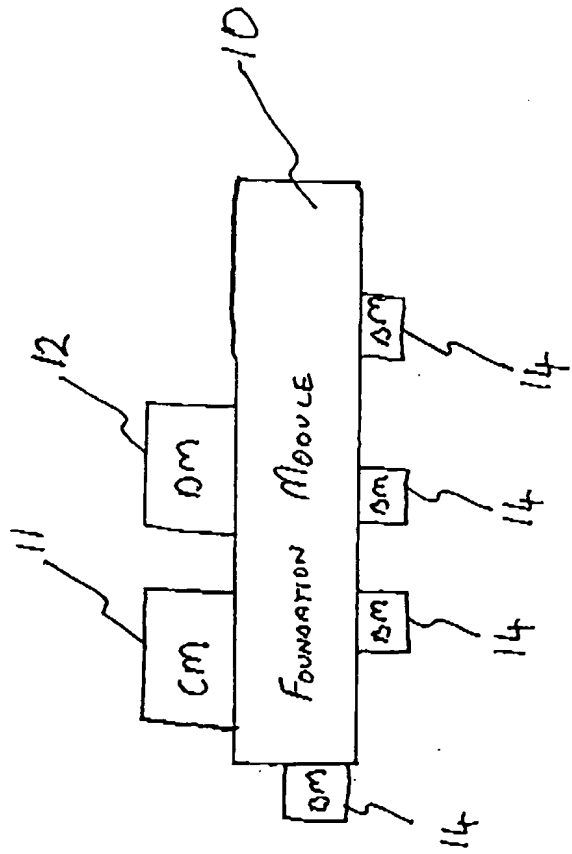


FIGURE 3



ENTITY 1

ENTITY 2

FIGURE 4.

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